

ABSTRACT OF THE DISCLOSURE

A local area augmentation navigation system for determining the location of an object using differential GPS. The system does not require any significant power or communication infrastructure. The system includes at least three reference stations, a master station and a LAAS receiver. The at least three reference stations are located in close proximity to each other and at known locations. Each of the reference stations receive a GPS signal from a GPS constellation and collect and output via a wireless transceiver the pseudo-range data from the GPS signal. The master station is positioned in close proximity to the reference stations and receives the pseudo-range data from the reference stations. The master station forms a correction message from the pseudo-range data and the known locations of the reference stations. The master station broadcasts the correction message within a specified area. The LAAS receiver is positioned within the specified area and receives the correction message broadcast by the master station as well as a GPS signal from the GPS constellation. The LAAS receiver calculates the location of the LAAS receiver with the correction message and the GPS signal.